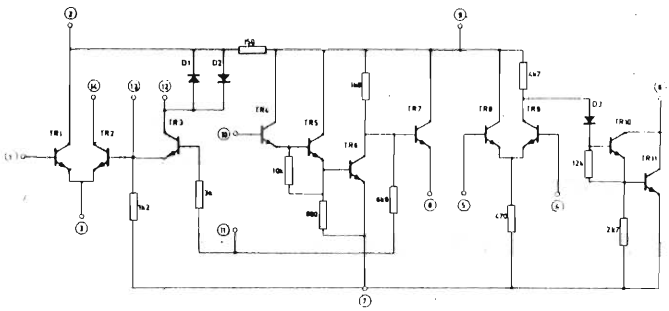
INTEGRATED A.M.-RADIO RECEIVER CIRCUIT

DEVELOPMENT SAMPLE DATA

The TAD100 is a monolithic integrated circuit primarily intended for a.m.-radio receivers. The circuit incorporates the mixer, oscillator, i.f. amplifier, a.g.c., detector and audio pre-amplifier and driver stages. The audio output transistors are not included. This enables the use of different power output stages to suit individual receiver requirements.

QUICK REFERENCE DATA				
Supply voltage	nom.	6.0	9.0	V
Output power at d_{tot} = 10% (with AC187/AC188)	typ.	0.7	1.5	W
Total quiescent receiver current	typ.	15	21	mA
Sensitivity (r.f. signal at Pin No. 1 to obtain 10 mV from detector)	typ.	4		μV

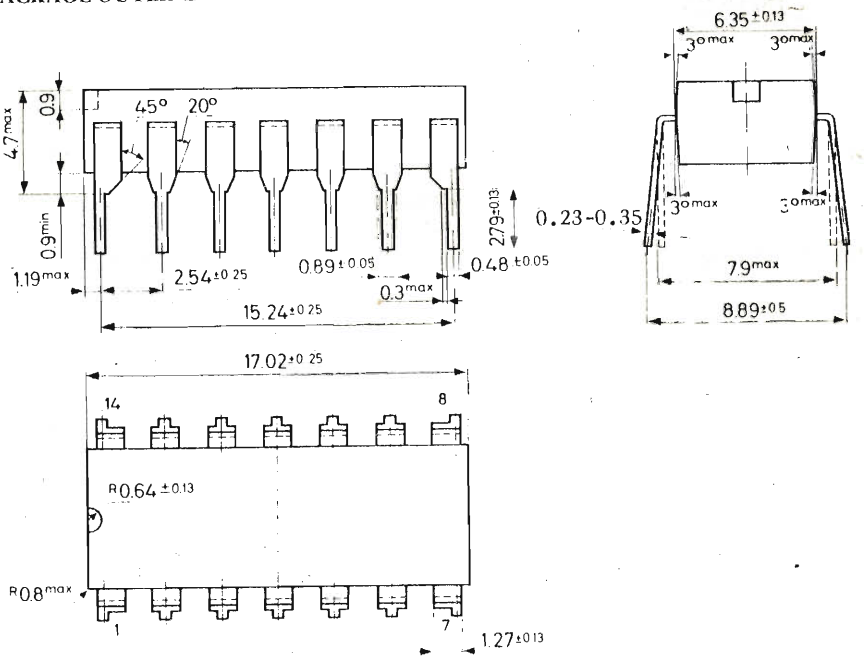
CIRCUIT DIAGRAM



These data, based on the specifications and measured performance of development samples, afford a preliminary indication of the characteristics to be expected of the described product. Distribution of development samples implies no guarantee as to the subsequent availability of the product

PACKAGE OUTLINE

Dimensions in mm



RATINGS (Limiting values) [1])

Temperatures

Storage temperature	−25 to +85	°C
Operating ambient temperature	−25 to +55	°C

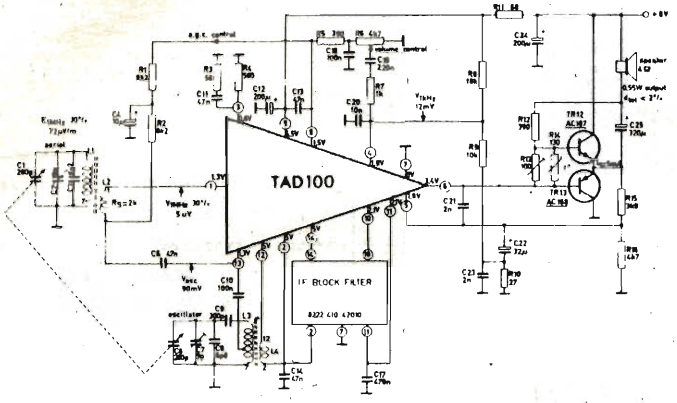
Voltages

Battery voltage applied to Pin No. 9 via 150 Ω	max.	10	V
Pin No. 6 voltage	max.	12	V

[1]) Limiting values according to the Absolute Maximum System as defined in IEC publication 134.

APPLICATION INFORMATION

Medium-wave receiver using the TAD100.



Output power at d_{tot} = 10%	typ.	0.7	W
Total receiver current	typ.	15	mA
Sensitivity at Pin No. 1			
f_0 = 1 MHz; m = 0.3; f_m = 1 kHz			
V_{out} of detector = 10 mV	typ.	4	μV
A.G.C. control range (for expansion in audio output of 10 dB)	>	60	dB
Input signal at Pin No. 1			
for a signal-noise ratio of 23 dB [1])	typ.	20	μV
26 dB [1])	typ.	30	μV
Distortion (over most of dynamic range)	<	2	%

HANDLING NOTES

1. Devices may be soldered directly into circuits with soldering irons. At iron temperatures below 245 °C the maximum soldering time should be less than 10 seconds and at iron temperatures between 245 °C and 400 °C the soldering time should be less than 5 seconds. In both cases the soldering iron should be applied below the seating plane.

2. Devices mounted up to the seating plane on a printed circuit board may be dip or flow soldered providing the solder temperature is below 245 °C and the time of immersion is less than 5 seconds. The body temperature should not be allowed to exceed the maximum storage temperature during soldering. If excessive preheat cycles are used, it may be necessary to cool the printed board immediately after leaving the solder bath/wave in order that this requirement be met.

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[1]) Measured at volume control potentiometer.
The optimum r.f. source impedance for the mixer stage is 2 kΩ.